

MSCI WORLD ESG MATERIALITY AND CARBON TRANSITION SELECT INDEX* METHODOLOGY

** An MSCI index that incorporates the SASB Materiality Framework*

January 2022

Contents

- 1 Introduction 3
- 2 MSCI ESG Research 4
 - 2.1 MSCI Climate Change Metrics.....4
 - 2.3 MSCI ESG Controversies.....4
 - 2.4 MSCI ESG Business Involvement Screening Research 5
- 3 Index Construction Methodology 6
 - 3.1 APPLICABLE UNIVERSE.....6
 - 3.2 ELIGIBLE UNIVERSE 6
 - 3.3 RANKING OF ELIGIBLE SECURITIES 7
 - 3.4 SELECTION OF ELIGIBLE SECURITIES..... 7
 - 3.5 WEIGHTING SCHEME.....7
- 4 Maintaining the MSCI World ESG Materiality and Carbon Transition Select Index..... 9
 - 4.1 Annual Index Reviews..... 9
 - 4.2 Ongoing Event Related Changes 9
- Appendix I: MSCI Low Carbon Transition Risk Assessment 11
- Appendix II: SASB Aligned ESG score..... 12

1 Introduction

The MSCI World ESG Materiality and Carbon Transition Select Index is designed to represent the performance of companies which are assessed to be sector leaders based on a set of relevant key issues scores that are aligned with SASB’s Materiality Map¹. The Index also excludes companies meeting the below exclusion criteria:

- Companies involved in Controversial Weapons
- Companies that fail to comply with the United Nations Global Compact Principles
- Companies with Low Carbon Transition (LCT) category² of Asset Stranding
- Companies involved in unconventional Oil and Gas
- Companies involved in the Tobacco-related businesses
- Companies involved in Thermal Coal mining and Thermal Coal power generation

The methodology uses the MSCI Low Carbon Transition (LCT) category to reweight constituents of the parent index to increase its exposure to companies participating in opportunities associated with the low carbon transition and decrease its exposure to companies exposed to risks associated with the low carbon transition.

¹ SASB’s Materiality Map reveals how general sustainability issues manifest across different industries. For more details, please refer to <https://www.sasb.org/standards/materiality-map/>

² For a detailed description of Low Carbon Transition Category, please refer to Appendix I.

2 MSCI ESG Research

MSCI ESG Research provides in-depth research, ratings, and analysis of the environmental, social, and governance-related business practices of thousands of companies worldwide. It consists of an integrated suite of tools and products to efficiently manage research, analysis, and compliance tasks across the spectrum of ESG factors.

The Index uses data provided by MSCI ESG Research and data sourced from the following MSCI ESG Research products: MSCI Climate Change Metrics, MSCI ESG Sustainable Impact Metrics, MSCI ESG Controversies and MSCI ESG Business Involvement Screening Research.

For details on MSCI ESG Research’s full suite of ESG products, please refer to: <https://www.msci.com/esg-investing>.

The Index also relies on a methodology that weights MSCI ESG Key Issue Scores based on their mapping to relevant General Issue Categories in the SASB Materiality Map. This mapping is presented in Appendix II Table 1. The mapping is maintained by MSCI ESG Research and updated when there are substantive changes to the SASB Materiality Map, the GICS industry structure, or to MSCI ESG Key Issues. The mapping is reviewed on at least an annual basis. The mapping is available on request to joint clients of MSCI ESG Research and SASB.

2.1 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics is designed to support investors seeking to achieve a range of objectives, including measuring, and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, and factoring climate change research into their risk management processes. It provides Carbon Emissions, Fossil Fuel exposure, environmental impact (i.e., clean technology) data and screens, as well as climate-related risk exposure and management assessment on companies such as Low Carbon Transition scores and categories.

For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>.

2.3 MSCI ESG CONTROVERSIES

MSCI ESG Controversies (formerly known as MSCI Impact Monitor) provides assessments of controversies concerning the negative environmental, social, and/or governance impact of company operations, products, and services. The evaluation

framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

For more details on MSCI ESG Controversies, please refer to:

<https://www.msci.com/documents/10199/acbe7c8a-a4e4-49de-9cf8-5e957245b86b>

2.4 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

For more details on MSCI ESG Business Involvement Screening Research, please refer to http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf.

3 Index Construction Methodology

3.1 APPLICABLE UNIVERSE

The Applicable Universe includes all the existing constituents of the MSCI World (“Parent Index”). This approach aims to provide an opportunity set with sufficient liquidity and investment capacity.

3.2 ELIGIBLE UNIVERSE

The eligible securities for the Index are selected from the Applicable Universe by excluding securities based on the exclusion criteria below:

1. **Controversial Weapons:** All companies involved in Controversial Weapons as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes³.
2. **Tobacco:** All companies deriving 5% or more revenue from the production of tobacco related products. All companies deriving 15% or more aggregate revenue from the production, distribution, retail, supply, and licensing of tobacco-related products
3. **Thermal Coal Mining:** All companies deriving 5% or more revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It excludes revenue from metallurgical coal, coal mined for internal power generation (e.g. in the case of vertically integrated power producers), intracompany sales of mined thermal coal, and revenue from coal trading (either reported or estimated)
4. **Thermal Coal Power:** All companies deriving 5% or more revenue (either reported or estimated) from thermal coal-based power generation.
5. **Unconventional Oil & Gas:** All companies deriving 5% or more revenue (either reported or estimated) from unconventional oil & gas. It includes revenue from oil sands, oil shale (kerogen-rich deposits), shale gas, shale oil, coal seam gas, and coal bed methane. It does not cover all types of conventional oil and gas production including Arctic onshore/offshore, deep water, shallow water and other onshore/offshore.
6. **Asset Stranding:** All companies classified in the Low Carbon Transition (LCT) category of Asset Stranding.

³ For more details regarding the MSCI Ex-Controversial Weapons Indexes, please refer to the MSCI Ex-Controversial Weapons Indexes methodology document at <https://www.msci.com/index-methodology>.

7. **United Nations Global Compact Principles:** All companies that fail to comply with the United Nations Global Compact Principles.

3.3 RANKING OF ELIGIBLE SECURITIES

For each sector, eligible securities of the Parent Index are ranked based on the SASB aligned ESG score⁴. If two securities have the same SASB aligned ESG score, then the security with higher market cap is given preference.

3.4 SELECTION OF ELIGIBLE SECURITIES

For each sector, eligible securities of the Parent Index are then selected from the ranked universe in the following order until the target 40% coverage by cumulative free float-adjusted market capitalization is reached⁵:

- Securities in the top 25% cumulative free float-adjusted market capitalization coverage of the ranked universe, including the first security that increases the cumulative coverage above 25%
- Current index constituents in the top 50% cumulative free float-adjusted market capitalization coverage of the ranked universe, including the first security that increases the cumulative coverage above 50% if that security is a current index constituent
- Remaining eligible securities in the ranked universe

3.5 WEIGHTING SCHEME

Based on the Low Carbon Transition (LCT) category⁶ of a company, a Tilt Score is calculated as under:

LCT Category	Tilt Score
Solutions	2
Neutral	1
Operational Transition	0.75
Product Transition	0.5

⁴ For a detailed description of SASB aligned ESG score, please refer to Appendix II.

⁵ In case of Initial Construction, for each sector, eligible securities of the Parent Index are selected from the ranked universe until the target 40% coverage by cumulative free float-adjusted market capitalization is reached.

⁶ For a detailed description of Low Carbon Transition Category, please refer to Appendix I.

All the selected securities from the Eligible Universe are weighted by the product of their weight in the Parent Index and the Tilt Score.

Security Weight = Tilt Score * Weight in Parent Index

The weights of securities are then renormalized so that the sector weights in the tilted portfolio are same as those in the selected portfolio described in section 3.4. Additionally, at each Annual Index Review, the weight of the securities is capped at 10%.

4 Maintaining the MSCI World ESG Materiality and Carbon Transition Select Index

4.1 Annual Index Reviews

The MSCI World ESG Materiality and Carbon Transition Select Index is reviewed on an annual basis in May to coincide with the May Semi-Annual Index Review of the Parent Index, and the changes are implemented at the end of May. In general, the pro forma indexes are announced nine business days before the effective date.

At each Index Review, the steps outlined in Section 3 are implemented.

In general, MSCI uses MSCI ESG Research data (including MSCI Climate Change Metrics, MSCI Climate Value-at-Risk, MSCI ESG Sustainable Impact Metrics, MSCI ESG Controversies, MSCI Business Involvement Screening Research and the mapping of SASB factors and materiality metrics to MSCI ESG research materiality factors for GICS subindustries as of the end of the month preceding the Index Reviews for the rebalancing of the Indexes.

4.2 Ongoing Event Related Changes

The general treatment of corporate events in the Indexes aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

Additionally, if the frequency of Index Reviews in the Parent Index is greater than the frequency of Index Reviews in the Index, the changes made to the Parent Index during intermediate Index Reviews will be neutralized in the Index.

The following section briefly describes the treatment of common corporate events within the Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. Parent Index deletions will be reflected simultaneously.

EVENT TYPE

EVENT DETAILS

New additions to the Parent Index

A new security added to the Parent index (such as IPO and other early inclusions) will not be added to the index.

Spin-Offs

All securities created as a result of the spin-off of an existing Index constituent will be added to the Index at the time of event implementation. Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Merger/Acquisition

For Mergers and Acquisitions, the acquirer’s post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.

If an existing Index constituent is acquired by a non-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.

Changes in Security Characteristics

A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book.

The MSCI Corporate Events methodology book is available at:
<https://www.msci.com/index-methodology>

Appendix I: MSCI Low Carbon Transition Risk Assessment

MSCI ESG Research’s Low Carbon Transition Risk assessment⁷ is designed to identify potential leaders and laggards by holistically measuring companies’ exposure to and management of risks and opportunities related to the low carbon transition.

The final output of this assessment is two company-level factors as described below:

- (1) **Low Carbon Transition Category:** This factor groups companies in five categories that highlight the predominant risks and opportunities they are most likely to face in the transition (Exhibit 1).
- (2) **Low Carbon Transition Score:** This score is based on a multi-dimensional risks and opportunities assessment and considers both predominant and secondary risks a company faces. It is industry agnostic and represents an absolute assessment of a company’s position vis-à-vis the transition.


LOW CARBON TRANSITION SCORE	LOW CARBON TRANSITION CATEGORY		LOW CARBON TRANSITION RISK / OPPORTUNITY	
 <p>Score = 0</p> <p>Score = 10</p>	ASSET STRANDING		Potential to experience “stranding” of physical / natural assets due to regulatory, market, or technological forces arising from low carbon transition.	Coal mining & coal based power generation; Oil sands exploration/production
	TRANSITION	PRODUCT	Reduced demand for carbon-intensive products and services. Leaders and laggards are defined by the ability to shift product portfolio to low-carbon products.	Oil & gas exploration & production; Petrol/diesel based automobile manufacturers, thermal power plant turbine manufacturers etc.
		OPERATIONAL	Increased operational and/or capital cost due to carbon taxes and/or investment in carbon emission mitigation measures leading to lower profitability of the companies.	Fossil fuel based power generation, cement, steel etc.
	NEUTRAL		Limited exposure to low carbon transition carbon risk. Though companies in this category could have exposure to physical risk and/or indirect exposure to low carbon transition risk via lending, investment etc.	Consumer staples, healthcare, etc.
	SOLUTIONS		Potential to benefit through the growth of low-carbon products and services.	Renewable electricity, electric vehicles, solar cell manufacturers etc.

Exhibit 1: Low Carbon Transition Categories and Scores

⁷ For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-change-solutions>

Appendix II: SASB Aligned ESG score

The SASB aligned ESG score is calculated using MSCI ESG Key Issue Scores and Key Issue Weights. Specifically, the SASB aligned ESG score for a company is the weighted average of a set of relevant Key Issue Scores that are aligned with SASB’s Materiality Map, granted that they meet the following condition:

- Companies are assessed on the identified key issue.
- Companies have corresponding Key Issue Weight greater than 0%.

The corresponding weights are normalized to sum up to 100%.

A set of relevant key issues are identified for each individual Global Industry Classification Standard (GICS®) Sub Industry. As a result, the relevant key issues identified for a particular GICS® Sub Industry are attributed to any company belonging to that GICS® Sub Industry (identified by a company’s GICS® Sub Industry Code). 160 GICS® Sub Industry Codes are mapped to 69 SASB Sub Industry categories and to 31 MSCI ESG key issues (KI).

The complete list of key issues relevant for each GICS Sub Industry are shown in Table 1 and Table 2 below

Table 1: SASB aligned ESG Key Issues for GICS Sub-industry

GICS Sub Industry Codes	SASB Industry	ESG Key Issue Number
50201010	Advertising & Marketing	KI 4, KI 16, KI 23, KI 25
20101010	Aerospace & Defense	KI 4, KI 7, KI 10, KI 18, KI 23, KI 25, KI 30
30202010	Agricultural Products	KI 7, KI 15, KI 25, KI 26, KI 28, KI 31
20301010	Air Freight & Logistics	KI 7, KI 15, KI 17, KI 25, KI 26, KI 30
20302010	Airlines	KI 4, KI 7, KI 17, KI 25
30201010, 30201020	Alcoholic Beverages	KI 7, KI 22, KI 25, KI 26, KI 28, KI 31
25203010, 25203020, 25203030, 25504010	Apparel, Accessories & Footwear	KI 8, KI 10, KI 26, KI 28
25201040	Appliance Manufacturing	KI 11, KI 18, KI 25
40201030, 40203010	Asset Management & Custody Activities	KI 4, KI 12, KI 13, KI 16, KI 27
25101010, 25101020	Auto Parts	KI 4, KI 7, KI 10, KI 18, KI 24, KI 25, KI 30

GICS Sub Industry Codes	SASB Industry	ESG Key Issue Number
25102010, 25102020	Automobiles	KI 10, KI 17, KI 18, KI 24, KI 25
35201010, 35202010, 35203010	Biotechnology & Pharmaceuticals	KI 3, KI 4, KI 16, KI 25, KI 26
15105010, 20102010, 20201060, 25201020	Building Products & Furnishings	KI 7, KI 8, KI 18, KI 26
25301010	Casinos & Gaming	KI 4, KI 7, KI 15, KI 25
15101010, 15101020, 15101030, 15101040, 15101050	Chemicals	KI 5, KI 7, KI 8, KI 15, KI 18, KI 24, KI 30, KI 31
10102050	Coal Operations	KI 5, KI 6, KI 7, KI 15, KI 17, KI 30, KI 31
40101010, 40101015, 40102010, 40201020	Commercial Banks	KI 2, KI 4, KI 13, KI 23, KI 27
15102010	Construction Materials	KI 4, KI 6, KI 7, KI 15, KI 18, KI 30, KI 31
40201040, 40202010	Consumer Finance	KI 12, KI 23
15103010, 15103020	Containers & Packaging	KI 7, KI 22, KI 25, KI 26, KI 30, KI 31
30101010	Drug Retailers	KI 7, KI 23, KI 25
25502020	E-Commerce	KI 7, KI 16, KI 23, KI 24, KI 31
25302010	Education	KI 23, KI 25
55101010, 55103010, 55105010, 55105020	Electric Utilities & Power Generators	KI 7, KI 15, KI 18, KI 21, KI 30, KI 31
20104010, 20104020, 20105010, 45203010	Electrical & Electronic Equipment	KI 4, KI 7, KI 8, KI 10, KI 18, KI 25, KI 30
45203020	Electronic Manufacturing Services & Original Design Manufacturing	KI 10, KI 11, KI 15, KI 17, KI 28, KI 30, KI 31
20103010, 20305020	Engineering & Construction Services	KI 4, KI 6, KI 15, KI 18, KI 19, KI 25
30101020, 30101030	Food Retailers & Distributors	KI 7, KI 17, KI 20, KI 22, KI 23, KI 25, KI 26, KI 28, KI 30
55102010	Gas Utilities & Distributors	KI 15, KI 18

GICS Sub Industry Codes	SASB Industry	ESG Key Issue Number
25201010, 45201020, 45202030, 45203015	Hardware	KI 8, KI 10, KI 11, KI 16, KI 18, KI 23, KI 26
35102015, 35102020	Health Care Delivery	KI 3, KI 4, KI 7, KI 15, KI 16, KI 23, KI 25, KI 30
35102010	Health Care Distributors	KI 4, KI 7, KI 11, KI 22, KI 25
25201030	Home Builders	KI 6, KI 15, KI 19, KI 30
25301020	Hotels & Lodging	KI 6, KI 7, KI 17, KI 31
25201050, 30301010, 30302010	Household & Personal Products	KI 8, KI 22, KI 25, KI 26, KI 31
20106010, 20106015, 20106020, 20107010	Industrial Machinery & Goods	KI 7, KI 10, KI 15, KI 18, KI 24
40301010, 40301020, 40301030, 40301040, 40301050	Insurance	KI 9, KI 12, KI 13, KI 27
45101010, 50203010	Internet Media & Services	KI 4, KI 7, KI 16, KI 23, KI 31
40203020, 40203030	Investment Banking & Brokerage	KI 4, KI 13, KI 16, KI 27
15104050	Iron & Steel Producers	KI 7, KI 15, KI 26, KI 30, KI 31
25301030, 25302020	Leisure Facilities	KI 7, KI 15, KI 25
35102030	Managed Care	KI 3, KI 23, KI 25
20303010, 20305030	Marine Transportation	KI 4, KI 6, KI 7, KI 15, KI 30
50201020, 50201040, 50202010	Media & Entertainment	KI 4, KI 25
35101010, 35101020	Medical Equipment & Supplies	KI 3, KI 4, KI 18, KI 25, KI 26
15104010, 15104020, 15104025, 15104030, 15104040, 15104045	Metals & Mining	KI 4, KI 5, KI 6, KI 7, KI 15, KI 17, KI 30, KI 31
40204010	Mortgage Finance	KI 9, KI 12
25501010, 25503010, 25503020, 25504020, 25504030, 25504040, 25504050, 25504060, 30101040, 45203030	Multiline and Specialty Retailers & Distributors	KI 7, KI 8, KI 16, KI 17, KI 18, KI 22, KI 23
30201030	Non-Alcoholic Beverages	KI 7, KI 20, KI 22, KI 25, KI 26, KI 28, KI 31

GICS Sub Industry Codes	SASB Industry	ESG Key Issue Number
10102010, 10102020	Oil & Gas - Exploration & Production	KI 4, KI 5, KI 6, KI 7, KI 15, KI 30, KI 31
10102040	Oil & Gas - Midstream	KI 4, KI 6, KI 7, KI 15, KI 30
10102030	Oil & Gas - Refining & Marketing	KI 4, KI 7, KI 15, KI 18, KI 30, KI 31
10101010, 10101020	Oil & Gas - Services	KI 4, KI 6, KI 7, KI 15, KI 30
30202030	Processed Foods	KI 7, KI 20, KI 22, KI 25, KI 26, KI 28, KI 31
20201010, 20201070, 20201080, 20202010, 20202020, 20305010	Professional & Commercial Services	KI 4, KI 16, KI 23
15105020	Pulp & Paper Products	KI 7, KI 26, KI 30, KI 31
20304010	Rail Transportation	KI 4, KI 7, KI 15, KI 30
60101010, 60101020, 60101030, 60101040, 60101050, 60101060, 60101070, 60101080, 60102010, 60102020, 60102030	Real Estate	KI 7, KI 19, KI 31
60102040	Real Estate Services	KI 4, KI 19
25301040	Restaurants	KI 7, KI 17, KI 20, KI 22, KI 25, KI 26, KI 28, KI 30, KI 31
20304020	Road Transportation	KI 7, KI 15, KI 30
40203040	Security & Commodity Exchanges	KI 4, KI 23
45301010, 45301020	Semiconductors	KI 4, KI 7, KI 8, KI 10, KI 15, KI 16, KI 18, KI 30, KI 31
35103010, 45102010, 45102020, 45102030, 45103010, 45103020, 45103030, 50202020	Software & IT Services	KI 4, KI 7, KI 16, KI 23, KI 31
50101010, 50101020, 50102010, 50201030	Telecommunication Services	KI 4, KI 7, KI 11, KI 23
30203010	Tobacco	KI 20, KI 25
25202010	Toys & Sporting Goods	KI 8, KI 28
20201050	Waste Management	KI 7, KI 15, KI 17, KI 30

GICS Sub Industry Codes	SASB Industry	ESG Key Issue Number
55104010	Water Utilities & Services	KI 7, KI 18, KI 25, KI 30, KI 31

Table 2: MSCI ESG Key Issues

Key Issue	Key Issue Number
Access to Communications	1
Access to Finance	2
Access to Healthcare	3
Governance Pillar Score	4
Community Relations Score	5
Biodiversity & Land Use Score	6
Carbon Emissions Score	7
Chemical Safety Score	8
Climate Change Vulnerability Score	9
Controversial Sourcing Score	10
Electronic Waste Score	11
Consumer Financial Protection Score	12
Financing Environmental Impact Score	13
Insuring Health & Demographic Risk Score	14
Health & Safety Score	15
Human Capital Development Score	16
Labor Management Score	17
Opportunities in Clean Tech Score	18
Opportunities in Green Building Score	19
Opportunities in Nutrition and Health Score	20
Opportunities in Renewable Energy Score	21
Packaging Material & Waste Score	22
Privacy & Data Security Score	23
Product Carbon Footprint Score	24
Product Safety and Quality Score	25
Raw Material Sourcing Score	26
Responsible Investment Score	27
Supply Chain Labor Standards Score	28
Tax Transparency	29
Toxic Emissions and Waste Score	30
Water Stress Score	31

Contact us

clientservice@msci.com

AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

* = toll free

ABOUT MSCI

MSCI is a leader provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at:

<https://www.msci.com/indexregulation>

To learn more, please visit www.msci.com.

Notice and disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from MSCI. All rights in the Information are reserved by MSCI and/or its Information Providers. The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services. The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION. Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors. Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results. The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons. None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments. Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance. The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy. Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice. Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of www.msci.com. MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body. Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and Standard & Poor's. MIFID2/MIFIR notice: MSCI ESG Research LLC does not distribute or act as an intermediary for financial instruments or structured deposits, nor does it deal on its own account, provide execution services for others or manage client accounts. No MSCI ESG Research product or service supports, promotes or is intended to support or promote any such activity. MSCI ESG Research is an independent provider of ESG data, reports and ratings based on published methodologies and available to clients on a subscription basis. We do not provide custom or one-off ratings or recommendations of securities or other financial instruments upon request.

Privacy notice: For information about how MSCI collects and uses personal data, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.